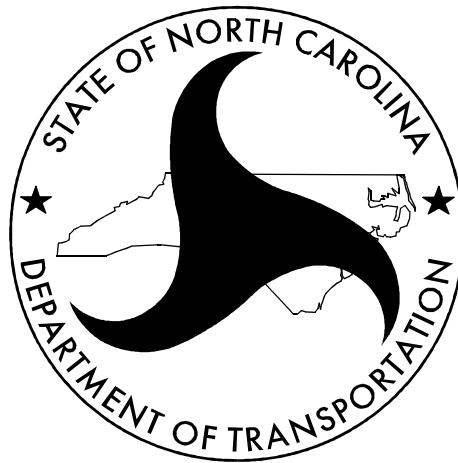


2012 Standard Specifications

Major Changes and Revisions



Prepared by
Contract Standards and Development Unit
Division of Highways
N.C. Department of Transportation

February 2012

2012 STANDARD SPECIFICATIONS

REVISION HIGHLIGHTS

OVERALL - ENTIRE BOOK

- The *2012 Standard Specifications* article and subarticle numbering is consecutive and blank subarticles are eliminated. Please note that references numbers may have changed in this publication. Sections and articles referenced in this document refer to the *2012 Standard Specifications*.
- The book has line numbers for easy reference.
- Table and figure numbers are designated as the section number hyphenated with a sequential reference number.
- Where applicable, statements regarding payment or compensation have been moved to the Measurement and Payment article within each section.
- Standard test methods have been updated where applicable.

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2012 STANDARD SPECIFICATIONS

REVISION HIGHLIGHTS

ARTICLE	DIVISION 1 – GENERAL REQUIREMENTS
101-2	Updates abbreviations used in the book. Adds a table of unit abbreviations and symbols used throughout the book.
101-3	Adds the definition for Standard Drawings. Modifies the definition of Supplemental Specifications to include Department published manuals referenced in the <i>Standard Specifications</i> .
102-2(B)	Adds subarticle for Purchase Order Contractor Prequalification.
102-9	Adds the Gift Ban Certification requirements.
102-14	Clarifies the licensing requirements for Contractors under the Rejection of Bids article and separated the requirements between State funded projects and Federal Aid projects.
102-15	Adds that when there is a failure to make prompt payments, it is justification to disqualify a Contractor.
103-2	Defines procedure in the case of bid omission for Mobilization and for Federally funded projects.
104-3,104-4, 104-7, 108-10(B)(4)	Adds references to the Contractor Claim Submittal Form.
104-7	Clarifies that extra work performed without the Engineer's consent will not be compensated.
106-3	Modifies Type 6 and Type 7 material certification requirements to remove the reference to Type 3 material certifications.
107	Removes the article on Use of Explosives. This information is now in the new Section 220 Blasting.
107-1	Adds gift ban requirements.
107-16	The liability insurance article was expanded to explain Contractor responsibility and specific insurance requirements.
107-24	Adds the last paragraph to clarify that receipt of claim records does not construe admission of liability.

ARTICLE	DIVISION 1 – GENERAL REQUIREMENTS
107-25	Adds the requirements for Contaminant Removal Reports, Underground Storage Tank Closure Reports, Certification of Remediation, and specific monitoring devices. Adds references to the applicable regulations and agency requirements.
108-2	Adds a list of requirements to be included in the progress schedule and major milestones. The progress schedule requires a cash curve which highlights the major milestones and work activities. A written report detailing the sequence of work, obtaining permits, working with subcontractors or outside entities, etc. is required.
109-4(B)	Under the subarticle on Prompt Payments, additional retainage above 3% to 10% is allowed if a mutual agreement is executed.
109-10	Under the article on Documents Required for the Processing of the Final Estimate, the last sentence was added to allow the Department to proceed with the final estimate even if the Contractor is nonresponsive.

ARTICLE	DIVISION 2 – EARTHWORK
200-4	Adds the requirement to clear 3 feet on either side of a bridge site.
200-8	Clarifies that if the Contractor requests and is approved for additional clearing, the seeding and mulching needed will be at no expense to the Department. Cutting and disposing of damaged plants and trees is incidental to clearing and grubbing.
210-2, 215-2	Adds the requirements for contaminant removal, underground storage tank removal or closure, and remediation. Adds references to the applicable regulations and agency requirements.
220	Adds section for Blasting.
225-1, 225-7	Adds the requirement for the construction of false sumps.
235-2	Adds specific soil classifications and requirements for embankments.
235-3	Adds the requirement to not place rock or broken pavement in embankment areas where piles or drilled piers will be built.
235-5	Adds paragraph regarding repairs to embankments stating that there will be no compensation from the Department for damage caused by the Contractor and that payment at contract unit price will be made for damage caused by nature.

ARTICLE	DIVISION 2 – EARTHWORK
265-4	Modifies the measurement and payment for Select Granular Material. Select granular material will be paid as Select Granular Material unless the material is obtained from the same source as the borrow material and the contract includes a pay item for Borrow Excavation. When this occurs, Select Granular Material will be paid at the lower bid price per cubic yard for either Borrow Excavation or Select Granular Material.
275	Adds section for Rock Plating.

ARTICLE	DIVISION 3 – PIPE CULVERTS
300-6	Allows the Department to perform forensic tests on pipe. Defines rigid pipe to include concrete and welded steel. Geotextile wrap is required for rigid pipes 42 inches or larger. Defined flexible pipes as corrugated steel, aluminum and HDPE and PVC pipe.
300-7	Requires bedding material beneath the pipe. Allows excavatable flowable fill for backfill when approved by the Engineer.
300-8	Defined the pipe inspection of the Engineer and when a pipe may be replaced or repaired.
300-9	Adds pay item for Foundation Conditioning Geotextile.
305	Adds section for Drainage Pipe.
310-6	Updates pay items.
320	Removes section on Corrugated Steel and Aluminum Alloy Structural Plate Pipe and Pipe Arch.
340-2	Material requirements for mix designs was removed as this information is covered by Division 10. Adds the Division 10 reference for flowable fill.

ARTICLE	DIVISION 4 – MAJOR STRUCTURES
Division 4	Adds the <i>LFRD Bridge Design Specifications</i> to the specifications.
402-2	Adds a requirement to not drop components of bridges being removed into the body of water.

ARTICLE	DIVISION 4 – MAJOR STRUCTURES
402-3	Adds pay item for removal of multiple structures at one station.
410	Moves the article for Subsurface Drainage at Weep Holes to Article 414-8. Removes article on Substructure Scour Protection.
411	Adds section for Drilled Piers and Crosshole Sonic Logging.
412-4	Removes the Unclassified Structure Excavation pay item paid in cubic yard.
414-8	Adds the Subsurface Drainage at Weep Holes article from Section 410 of the <i>2006 Standard Specifications</i> .
420-13	Adds installation of adhesive anchors. Adds two levels of field testing. The level of field inspection to be used will be indicated in the plans. Anchor or dowels that fail the field test will be removed and replaced.
420-20	Adds limits for when a screed may be rolled across a newly placed bridge deck.
442-3	Deletes reference to weep hole drain now covered in Article 414-8.
425-5	Simplifies the splice requirements for reinforcement to use the manufacturer's recommendations.
440-8	Removes the Turn of Nut Tightening procedures.
442	Updates the paint system submittal requirements, quality control, surface preparation, paint system requirements, paint application conditions, storage conditions, mixing paint requirements, thinning paint requirements, stripe coat instructions, paint certifications, and preparation for painting galvanized surfaces.
442-12	Adds article for Preparation for Painting Galvanized Surfaces.
450	Changes the section title from Bearing Piles to Piles. Revises the section to LRFD and adds composite piles, predrilling, spudding, pile excavation and PDA testing requirements.
452	Revises the Sheet Pile Retaining Walls.
453	Removes section on Gravity Retaining Walls.

ARTICLE	DIVISION 5 – SUBGRADE, BASES, AND SHOULDERS
501	Removes calendar restrictions on applying lime.
505	Adds section for Aggregate Subgrade.
520-5	Modifies the time limits for adding sand seal over a base course.
520-8, 540-8	Modifies base course tolerance for applications under concrete to 1/4".
530	Removes section on Soil Type Base Course.
542	Adds aggregate for soil cement base.
542-3	Removes calendar limits for construction of soil-cement base.
545-2	Adds recycled concrete to incidental stone base.

ARTICLE	DIVISION 6 – ASPHALT PAVEMENTS
Division 6	Many of the quality control values and requirements are referenced to the Department's <i>HMA/QMS Manual</i> .
607-3	Adds the option of using a temporary bridge steel plate over utilities during milling operations.
607-5	Modifies and clarifies when to use the pay item of incidental milling.
609, 610	Removes the 4.75 mm mix.
609-3	Adds the field verification instructions for warm mix asphalt.
609-6	Corrective actions are triggered by moving average values instead of warning limits.
610	Adds warm mix asphalt requirements. Adds reclaimed asphalt shingle requirements and modifies reclaimed asphalt pavement requirements. Removes redundant sections that are covered by the Department's <i>HMA/QMS Manual</i> .
610-8	Expands use of MTV to Interstate and US routes that have four or more lanes and are median divided.
610-13	Modifies the final surface testing to include the Inertial Profiler testing and Hearne straightedge option.

ARTICLE	DIVISION 6 – ASPHALT PAVEMENTS
610-14	Changes pay factor formula for density deficiency to go to a 70% reduction in pay.
657-3	Modifies the temperature range and minimum application thickness for the application of hot applied joint sealer.
660-11	Adds price adjustment for slurry seal.

ARTICLE	DIVISION 7 – CONCRETE PAVEMENTS AND SHOULDERS
700-4	Modifies grading tolerance to $\pm \frac{1}{4}$ " from established grade on mainline lanes.
700-5	Changes strength requirement for allowing construction equipment or hauling equipment on concrete pavement until it has attained a compressive strength of 3,500 psi.
700-11(G)	Adds subarticle on Verification of Dowel Bar Alignment.
700-13	Changes strength requirement for allowing traffic and heavy equipment on concrete pavement to a minimum compressive strength of 3,500 psi.
710-3,710-4	Modifies concrete requirements to 650 psi flexural and 4,500 psi compressive strength.
710-7	Modifies final surface testing to require Inertial Profiler.
710-10(B)	Changes the pay factor for concrete thickness to a formula.
710-10(C)	Modifies pay factor formula for compressive strength and adds pay factor formula for flexural strength.
725-2	Modifies requirements for the field office. Only Department representatives will have unattended access to the field office.

ARTICLE	DIVISION 8 – INCIDENTALS
801-2(D), 806	Adds control-of-access markers.
801-3(E)	Increases the rates for Supplemental Surveying Office Calculations to \$60/hr and Supplemental Surveying to \$110/hr.

ARTICLE	DIVISION 8 – INCIDENTALS
802-2	References the Department’s website for reclamation procedures.
806	Adds material requirements for right-of-way and control-of-access markers.
815	Adds subsurface drain and other requirements from the subsurface drainage provision.
815-4	Removes Subdrain Wyes, Tees and Elbows pay item.
848	Changes the reference from “wheelchair” to “curb ramps.”
858-3	Adds the requirement of a ramp with a tapered slope on manholes or other structures in the roadway.
859-4	Adds additional pay items for converting existing catch basins to junction boxes, drop inlets to catch basins, drop inlets to junction box, junction box to drop inlet and junction box to catch basin.

ARTICLE	DIVISION 9 – SIGNING
901-3	Adds Type C signs. Removes the Department inspection procedures.
901-3(A)	Adds requirements to ship multi-panel signs intact, assembled and ready to be installed.
901-4	Adds subarticle on sign quality.
904-4	Removes pay item for erecting walkway signs.

ARTICLE	DIVISION 10 – MATERIALS
1000-2, 1000-7, 1002-2, 1024-1	Adds Type IT blended cement.
1000-3	Adds the requirement to submit new mix design for any change and additional requirements for major changes. Updates Table 1000-1 Requirements for Concrete.
1000-12	Adds article for Volumetric Mixed Concrete.

ARTICLE	DIVISION 10 – MATERIALS
1002	Adds section for Shotcrete.
1003	Adds section for Grout.
1005-1	Table 1005-1, adds size 9 and Lightweight.
1006, 1008, 1010	References <i>Aggregate QC/QA Program Manual</i> and removes redundant information. Removes soil type base course requirements.
1012-1	Modifies RAP and RAS requirements.
1019	Adds section for Shoulder and Slope Material.
1020	Modifies requirements for Emulsions and Residue.
1024-4	Modifies requirement for water testing in the specified counties.
1032	Removes Corrugated Steel and Aluminum Alloy Structural Plate Pipe and Pipe Arch and Vitrified Clay Culvert Pipe.
1032-6	Removes Plain Concrete Culvert Pipe.
1032-8	Adds article for PVC Profile Wall Drain Pipe.
1034	Removes Acrylonitrile Butadiene Styrene (ABS) Pipe.
1040-4	Adds article for Segmental Retaining Wall Units.
1040-9	Removes the article of Cement Grout because of the new Section 1003.
1042-2	Modifies test requirements for Rip Rap.
1043	Adds section for Aggregate from Crushed Concrete.
1044-2	Adds article for Subdrain Course Aggregate.
1050-1(B)	Adds Table 1050-1 for Wire Diameter.
1050-6	Adds requirements for glare screen to the Chain Link Fabric article.
1054	Moves right-of-way marker material requirements to Section 806. Changes the name of the section to “Drains.” Removes the article for synthetic roving. Moves the article for the grout for concrete roadway traffic barrier to Section 1003.

ARTICLE	DIVISION 10 – MATERIALS
1056	Renames “Engineering Fabrics” to “Geosynthetics.” Modifies the geotextile requirements and adds geocomposites.
1060-10	Adds geophyte material requirements.
1060-14	Adds coir fiber mat material requirements.
1060-15	Adds special stilling basin material requirements.
1072	Removes articles for Structural Steel of Foreign Origin and Fabrication of Structural Steel Outside Continental Limits of United States.
1072-18	Adds requirement for commercially blast cleaning steel before welding. All field welds require approval for welding procedure specifications.
1072-21	Adds limits for placement of steel beams and girders for shipping.
1076-2	Adds article for Inspection Notification for galvanizing.
1076-7	Adds requirements for repair of galvanizing.
1077-5	Adds requirements for precast wall units to Table 1077-1.
1077-7	Adds requirements for steel and macrosynthetic fiber reinforcement.
1077-12	Adds article for exposed aggregate finish for precast concrete panels.
1077-16	Adds article for incidental precast items.
1078-1	Adds subarticles for prestressed concrete members producer qualification and working drawing submittals.
1078-12	Modifies requirements for handling vertical cracks in prestressed concrete. All members, except those defined as unacceptable, which exhibit vertical cracks before detensioning shall receive a 7 day water cure.
1078-15	Modifies final finish requirements to include finish for prestressed concrete members.
1079-2	Removes natural rubber elastomer table and dimensional tolerances of elastomer bearings.
1080	Modifies test methods for paint.

ARTICLE	DIVISION 10 – MATERIALS
1081	Modifies test and prequalification requirements for epoxies and hot bitumen. Adds subarticle for anchor bolt adhesive.
1082	Modifies the AWWA standard classifications.
1086-2	Adds subarticle on Epoxy Adhesives for permanent raised pavement markers.
1087-4, 1087-7	Adds arsenic restrictions for glass beads.
1089	Changes work zone sign designations from Types to Grades.
1089-6	Changes “Flashing Arrow Panels” to “Flashing Arrow Boards.”
1089-9	Changes “Truck Mounted Impact Attenuators” to “Truck Mounted Attenuators.”
1090	Removes subarticle for anchor bolt adhesive.
1091	Adds section for Electrical Materials.
1092	Removes article for Very High Bond Tape. Added Retroreflective Sheeting.
1093	Moves section for Retroreflective Sheeting to Section 1092.
1097	Removes section for Sign Lighting Systems.
1098	Moves articles for Conduit to Section 1091.
1098-6	Removes article for Wood Poles. Added article for Pole Line Hardware.
1098-10	Modifies the requirements for single mode fiber optic cable.
1098-14	Adds several subarticles to subdivide Pedestals.
1098-18	Adds article for Spread Spectrum Wireless Radio.

ARTICLE	DIVISION 11 – WORK ZONE TRAFFIC CONTROL
1101-1	The adds the requirements of 23 CFR 630 Subparts J and K and defines the components of the Transportation Management Plan (TMP): Temporary Traffic Control Plan (TTC), Transportation Operations Plan (TO), and Public Information Plan (PI).

ARTICLE	DIVISION 11 – WORK ZONE TRAFFIC CONTROL
1101-13	Modifies the requirements of the Traffic Control Supervisor.
1101-15	Adds article for Pedestrian Access.
1105-6	Adds pay item for lump sum Temporary Traffic Control.
1115	Changes from “Flashing Arrow Panels, Type C” to “Flashing Arrow Boards.”
1120-3	Adds requirements for messages and phases on portable changeable message signs.
1130-3	Adds spacing of drums equal in feet to the speed limit in the taper and twice the speed limit in the tangent sections.
1135-3	Adds requirements for cones in daytime and nighttime applications.
1150-3	Flagger qualification requirements.
1170	Replaces “Portable Concrete Barrier” to “Positive Protection.” Added water-filled barriers.
1180-3	Adds spacing requirements for skinny drums.

ARTICLE	DIVISION 12 – PAVEMENT MARKINGS, MARKERS AND DELINEATION
1205-3	In Table 1205-1, Interstates and other “control-of-access” roadways shall have all pavement markings completed by the end of the workday if the roadway is to be opened to traffic. Adds requirements for interim and temporary paint markings. Changes the observation period for paint from 180 days to 12 months.
1205-4(C)	Adds paint requirements for arrows: the stem of straight arrows shall be completed in one pass, the stem of turn arrows in no more than 2 passes, and the arrow head in no more than 3 passes.
1205-9	Changes the observation period for paint from 180 days to 12 months.
1205-10	Adds that Paint Pavement Marking Symbols will be paid for each 15 mil application.
1250-3(E)	A certified pavement marking technician shall be present while pavement markings are being placed.

ARTICLE	DIVISION 14 – LIGHTING
1400-2(C)	Branch circuits in light standards shall use UL Type SO cable.
1400-4(I)	Replaces article for “Concrete Foundation” with “Base Protection.” Adds requirement for a protective metal shroud on median mounted lights.
1400-5	A calibrated MegOhmMeter shall be presented at the pre-lighting work meeting. Adds requirements for inspections including Contractor supplying the Engineer with a Certificate of Inspection from the Office of State Fire Marshall.
1400-6	Adds the requirement for the Burn-In Test.
1400-11	A Pre-Lighting-Work meeting is to be scheduled by the Contractor prior to beginning lighting system work.
1400-13	Adds article for Contractor Meg Circuit Data Form.
1400-14	Adds article for Lighting System Inspection Checklist.
1401-2(A)	Modifies requirements for High Mount Lighting including providing certified drawings by a professional engineer.
1402	Removes section on High Mount Foundations.
1403	Changes the definition of high mount luminaries to greater than 60 feet instead of 75 feet.
1404	Changes the definition of light standards to less than 55 feet instead of 75 feet.
1405-2, 1407-2, 1408-2, 1409-2, 1410-2, 1411-2, 1412-2	Adds material requirements referenced from Division 10.

ARTICLE	DIVISION 15 – UTILITY CONSTRUCTION
1525-3	Manholes should be flush plus or minus one quarter inch for driveways, sidewalks, and parking lots instead of plus or minus one half inch.

ARTICLE	DIVISION 16 – EROSION CONTROL AND ROADSIDE DEVELOPMENT
1606	Adds section for Special Sediment Control Fence.
1607	Adds section for Gravel Construction Entrance.
1622-4	Removes <i>Inlet Protection at Temporary Slope Drain</i> pay item and uses <i>Temporary Slope Drains</i> to pay for the work.
1631-3	Removes synthetic roving from this section.
1636	Adds section for Temporary Stream Crossing.
1637-3	For Riser Basin, adds requirements for skimmer, coir fiber baffles and stone energy dissipater.
1639	Adds section for Special Stilling Basin.
1640	Adds section for Coir Fiber Baffle.
1660, 1665	Removes reference to liquid fertilizer.
1667	Adds section for Specialized Hand Mowing.
1670-4(D), 1670-9(F)	Adds article for Geophytes.

ARTICLE	DIVISION 17 – SIGNALS AND INTELLIGENT TRANSPORTATION SYSTEMS
1700-3	Adds requirement for IMSA certified Level II traffic qualified signal technician and maintenance (testing) on all Traffic Signal Conflict Monitors every 12 months for the life of the project. Adds requirements for modifying and testing existing electrical services to meet the grounding requirements of NEC.
1705-3	Adds vehicle signal heads mounting dimension requirements. Adds articles for Optically-Programmed Vehicle Signal Sections, Louvers, and Modify Existing Vehicle Signal Heads.
1710-3	Adds reference to the <i>Metal Pole Standard Drawing</i> Sheet M6.
1715-3	Adds article for Conduit Entering Cabinet Foundations.
1715-4	Adds pay item for Unpaved Trenching for Temporary Lead-In.

ARTICLE	DIVISION 17 – SIGNALS AND INTELLIGENT TRANSPORTATION SYSTEMS
1716-3	Adds the requirement to provide coordinate information for junction boxes to the Engineer in a spreadsheet provided by the Department.
1720-3	Ensures wood poles are of sufficient length to maintain the minimum required clearances above the roadway, obstructions, and affected railroad tracks.
1722-2, 1730-2	Adds material requirements referenced from Division 10.
1772-3	Adds riser requirements.
1736	Adds section for Spread Spectrum Radio.
1743	Modifies the section for “Signal Pedestals” to “Pedestals.”
1746	Adds section for Relocate Existing Sign.
1747	Adds section for LED Blankout Sign.
1752	Adds section for Modify Cabinet Foundations.
1757	Adds section for Removal of Existing Traffic Signals.